

Karakteristik Ekstrak Pewarna dan Kualitas Pewarnaannya Pada Kain Adat Sumba Dari Pewarna Akar Mengkudu (*Morinda citrifolia* L.)

Hasil Dari Beberapa Ekstraksi

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INTISARI

Akar mengkudu (*Morinda citrifolia* L.) mengandung turunan antrakuinon yaitu morindon dan morindin yang dapat digunakan sebagai pewarna alami merah dan kuning. Pewarna alami memiliki kelemahan pada pewarnaannya dan daya tahan lunturanya. Penelitian ini bertujuan untuk mengetahui pengaruh metode ekstraksi terhadap karakteristik warna, lama perendaman terhadap nilai warna serta lama perendaman terhadap ketahanan luntur warna yang dihasilkan.

Pewarna alami pada penelitian ini dibuat dari akar mengkudu yang diekstraksi dengan metode perebusan dengan aquades, maserasi dengan etanol 70% dan 95%. Perbedaan faktor ukuran dan metode ekstraksi menghasilkan 6 kombinasi sampel dengan 3 ulangan ($6 \times 3 = 18$ sampel). Larutan pewarna kemudian diuji karakteristiknya meliputi : intensitas warna, pengaruh suhu 30°C dan 100°C, dan keasaman/pH. Kain diwarnai dengan dengan metode perendaman selama 1x24 jam dan 2x24 jam. Setelah diwarnai kain difiksasi menggunakan tawas. Selanjutnya, kain tersebut diuji indeks warna dan ketahanan lunturanya, yang meliputi ketahanan luntur warna terhadap keringat asam, ketahanan luntur warna terhadap penyetrikaan kering, dan ketahanan luntur warna terhadap gosok kering.

Hasil penelitian menunjukkan faktor ekstraksi berpengaruh terhadap pengujian karakteristik warna. Nilai tertinggi pada karakteristik warna terdapat pada cara ekstraksi perebusan menggunakan larutan aquades. Didapatkan hasil bahwa perebusan larutan aquades sangat baik digunakan untuk pewarnaan kain adat sumba. Hasil karakteristik warna : rata-rata nilai intensitas warna sebesar 0,225, pengaruh suhu 30°C dan 100°C sebesar 0,198 dan 0,176 dan rata-rata pH 7,35 (basa). Nilai warna yang dihasilkan untuk setiap ekstraksi yang dilakukan dengan lama perendaman 1x24 jam dan 2x24 jam memiliki kelompok warna yang berbeda yaitu *Aragon*, *Tobacco Brown*, *Roebuck*, *Fired Brick*, *Sheepskin* dan *Old Rose*. Hasil yang diperoleh untuk ketahanan luntur warna kain terhadap keringat asam, penyetrikaan kering dan gosokan cenderung baik dengan rata-rata *grey scale* dan *staining scale* pada masing-masing pengujian sebesar 4 sampai 4-5 (baik).

Kata kunci : pewarna alami, ekstraksi, indeks warna, ketahanan luntur

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Characteristic of Dye Extracts and Dyeing Quality from Noni Root Dyes (*Morinda citrifolia* L.) on Traditional Sumba Fabrics: An Output from Various Extraction Process

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ABSTRACT

Noniroot (*Morinda citrifolia* L.) consists of anthraquinone derivatives, specifically morindon and morindin, which can be used as red and yellow natural dyes. Natural dyes mentioned previously are known for having notorious weakness in terms of its pigmentation and colorfast aspect. This study aims to determine the effect of different extraction methods affects the characteristics of the color and the duration of soaking effects on the color value and its colorfasts aspects.

In this study, natural dyes were made from noni roots, which were extracted by boiling the roots using a combination of distilled water (aquades), maceration with both 70% and 95% ethanol. Due to differences in size factors and extraction methods used in these studies, the extraction process resulted in 6 sample combinations with 3 replications ($6 \times 3 = 18$ samples). These samples, of which further will be referred as natural dye solution, were then tested to find out its characteristics such as color intensity, temperature fluctuations, of which 30°C and 100°C was picked as variable, and also acidity or pH level. Fabrics were then soaked to achieve its stain and then left for 24 hours up to 48 hours. Following the dyeing process is the fixation process, the fabric would be fixated using alum. Subsequently, the fabric then gets tested for color index and colorfast aspects such as reactions towards acid contained on sweats, dry ironing process, and dry rubbing process.

Outcome of this research further proved that the extraction factor chosen within the scope of this study had an immense effect on assessing the color characteristics. The highest value for color characteristics on the scope of dyeing traditional Sumba Fabrics was found in the extraction method involving boiling the fabric and distilled water (aquades). From that matter, the extraction method mentioned previously are undeniably the best methods out of all extraction processes that had been done within this research for dyeing traditional Sumba Fabrics. The results of color characteristic then can be specified to several aspects, which consists of average color intensity valuing at 0.225, effects of temperature fluctuation between 30°C and 100°C which resulted in 0.198 and 0.176, along with the average pH valuing at 7.35 (alkaline). The resulting color values done for each extraction process were carried out (soaked in dye) within 24 and 48 hours resulting in various color groups, namely *Aragon*, *Tobacco Brown*, *Roebuck*, *Fired Brick*, *Sheepskin and Old Rose*. In regards to the results collected from the colorfastness of the fabric towards acid sweat, dry ironing and rubbing tended to be good, with an average gray scale and staining scale in each test rounding to around 4 to 4-5 (good).

Keywords: natural dyes, extraction, color value, colorfastness

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